

스마트교육을 아시나요?

Smart Education under AlphaGo Age

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PRESIDENT, Smart Education Society





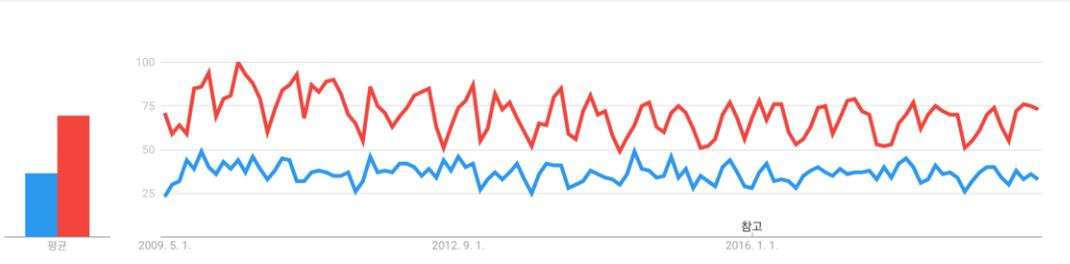
smart education
검색어

future education
검색어

+ 비교 추가

전 세계 | 09. 5. 1.~19. 4. 20. | 모든 카테고리 | 웹 검색

시간 흐름에 따른 관심도 변화



지역별 비교 분석

smart education | future education

정렬: smart education에 대한 관심도

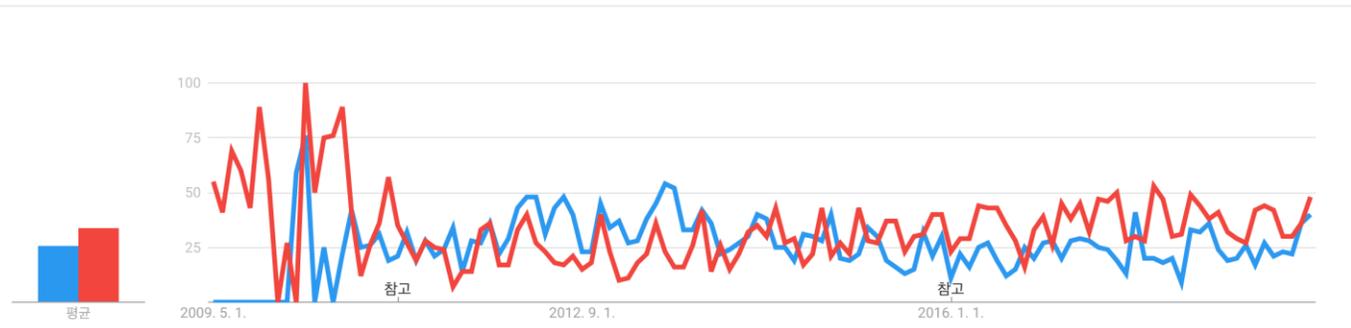
스마트교육
검색어

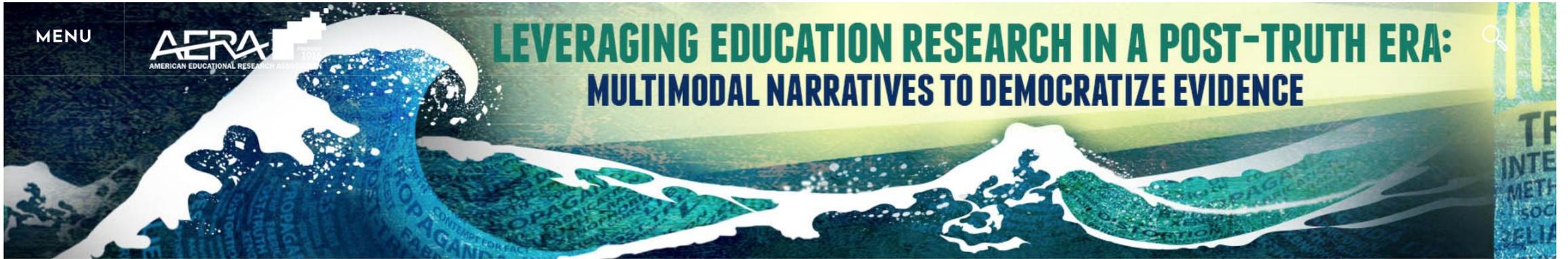
미래교육
검색어

+ 비교 추가

대한민국 | 09. 5. 1.~19. 4. 20. | 모든 카테고리 | 웹 검색

시간 흐름에 따른 관심도 변화





2019 AERA ANNUAL MEETING | APRIL 5 - 9, 2019 | TORONTO, CANADA

Each year, the **American Educational Research Association (AERA)** Annual Meeting is the world's largest gathering of education researchers and a showcase for groundbreaking, innovative studies in an array of areas. Join us at the **Metro Toronto Convention Centre**, **April 5 - 9, 2019**, for five rewarding days of ideas, engagement, networking, and professional advancement.

Quick Links: [Entry Into Canada](#) | [FAQ](#) | [2019 Print Program Files](#) | [Program Schedule](#)



REGISTRATION |



PROGRAM



MEETING SERVICES



EXHIBITS |

Leaving Toronto AERA 2019.

Aera is the largest association of educational researchers in the world. Aera 2019 celebrates its 100th anniversary this year. As said, Some about 25000 researchers attended and around 100 even from Koreans in and out.

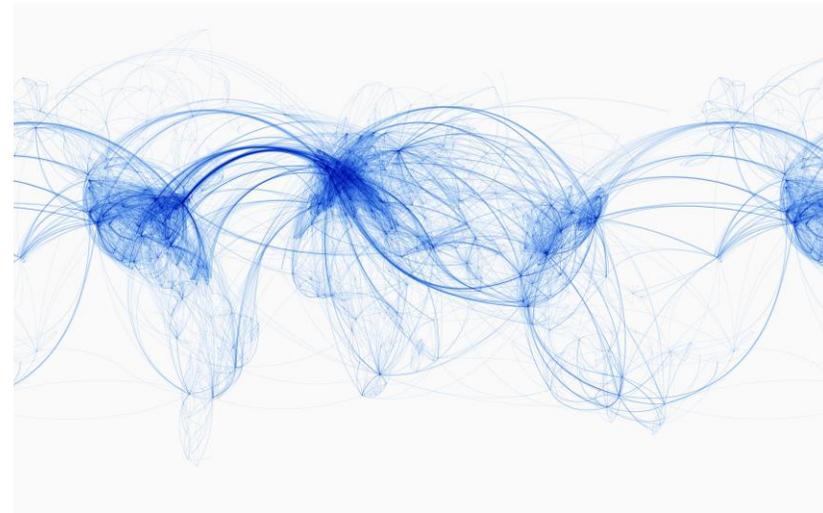
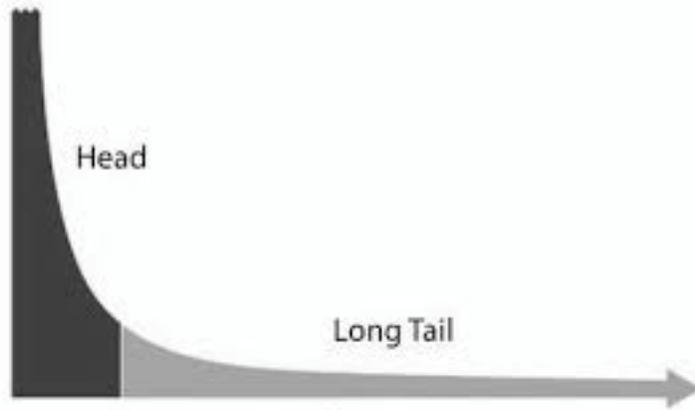
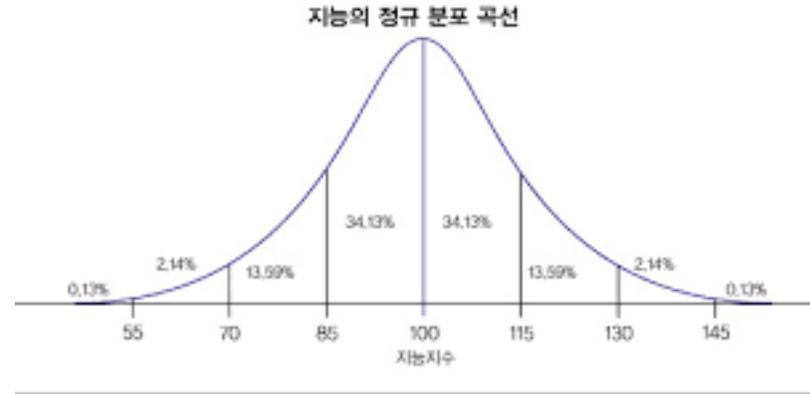
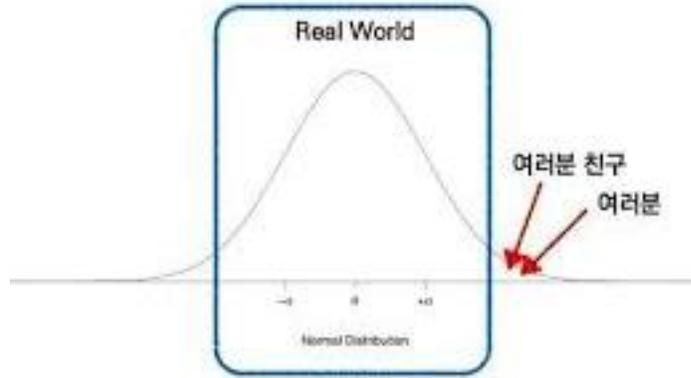
My impression is a sort of sorrow feeling somewhere in the lost world. Too luxuries of jargons and big discourses, struggling for searching the exit from the prisons of education.

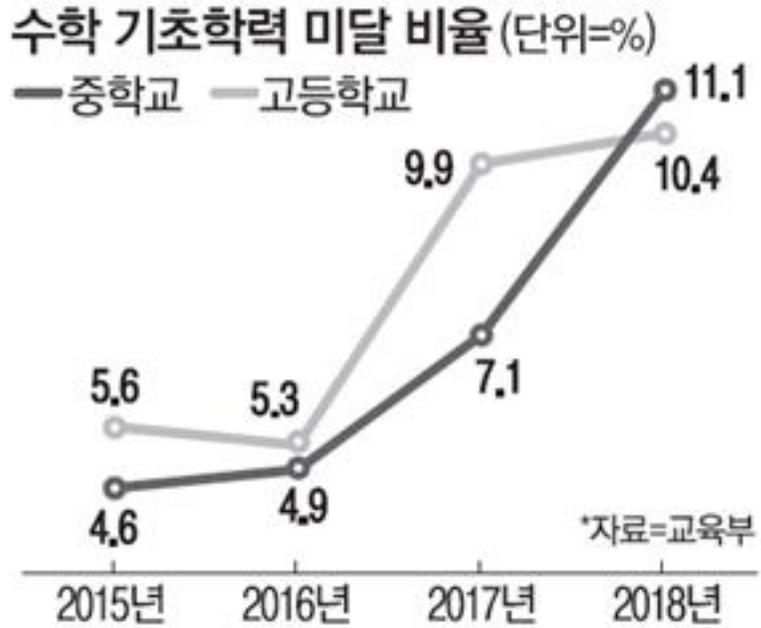
Education is locked in. There must be an emergent exit out the education initiated in 2011 by Korean people was too early showed a tiny slit. Renaissance of Korean education world.

LOCKED IN



정상분포와 멱함수 분포, 당신은 어느 쪽에 속해 있습니까?





질문 1: 미달자는 더 늘어날까요 ?

질문 2: 더 늘어나면 왜 안될까요 ?

질문 3: 미달자 최소 기준은 있을까요 ?

기초학력미달자란 ?

1. 모른다.
2. 20점 미만자.
3. 난이도 20% 이하 문제도 못 푸는 학생 ?

지능이란 것도 사실은....

1. 모른다.
2. 언어와 수학 점수일 뿐이다
3. 그것도 주로 영어....?

Does Education Really Matter ?

Yes, It Does ! See Korea !

Indeed, Since Human
Civilization It Has Been: Egypt,
Sumer, Hellenism, Islam and
even to Anglo-Saxons.....

Education First by UN SDG.

However, We do not know how
it really matters,,,,,,

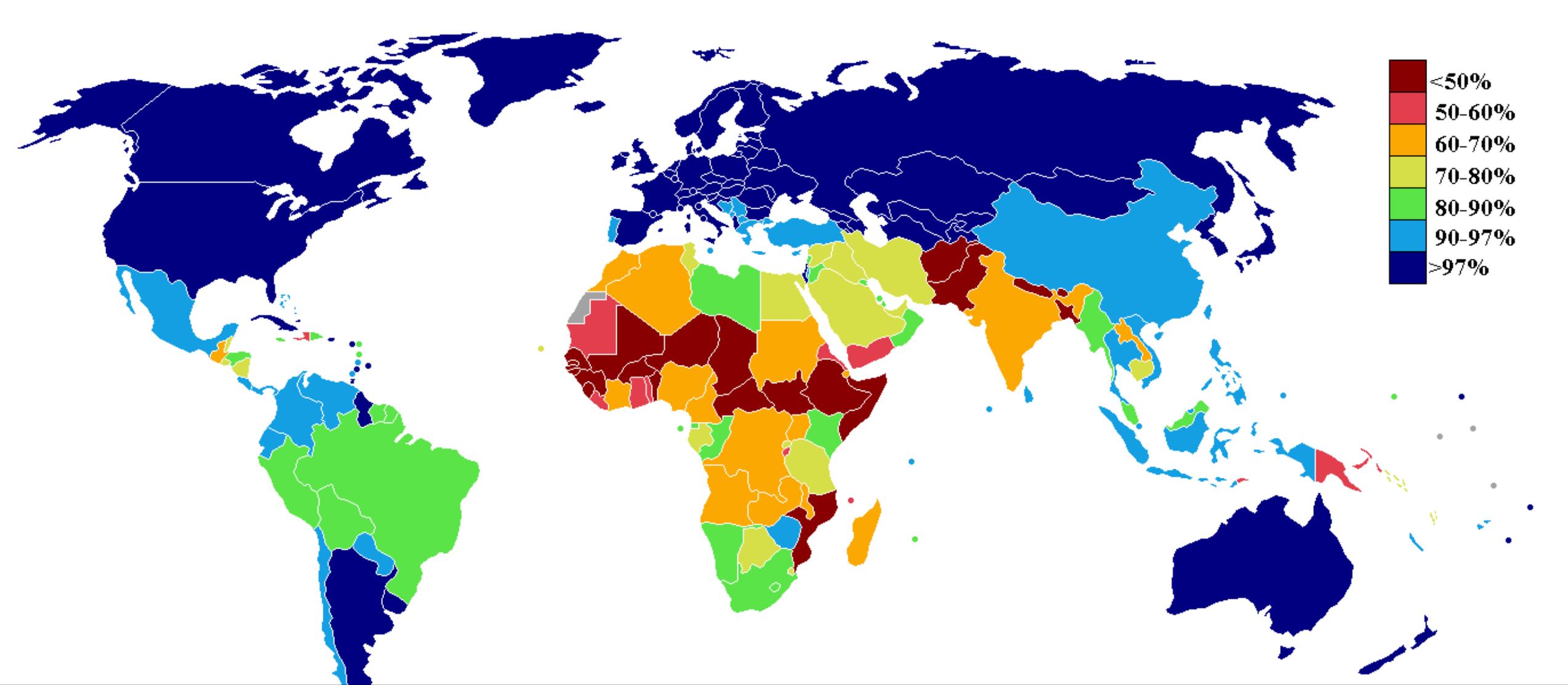


Education is the problem?



그들은 학교에 왔는가?
그들은 공부를 하는가?





Global Literacy Rates, Global Development Gaps

But,
HOW ?
Then in
Korea.....





Secrets of Korean Success

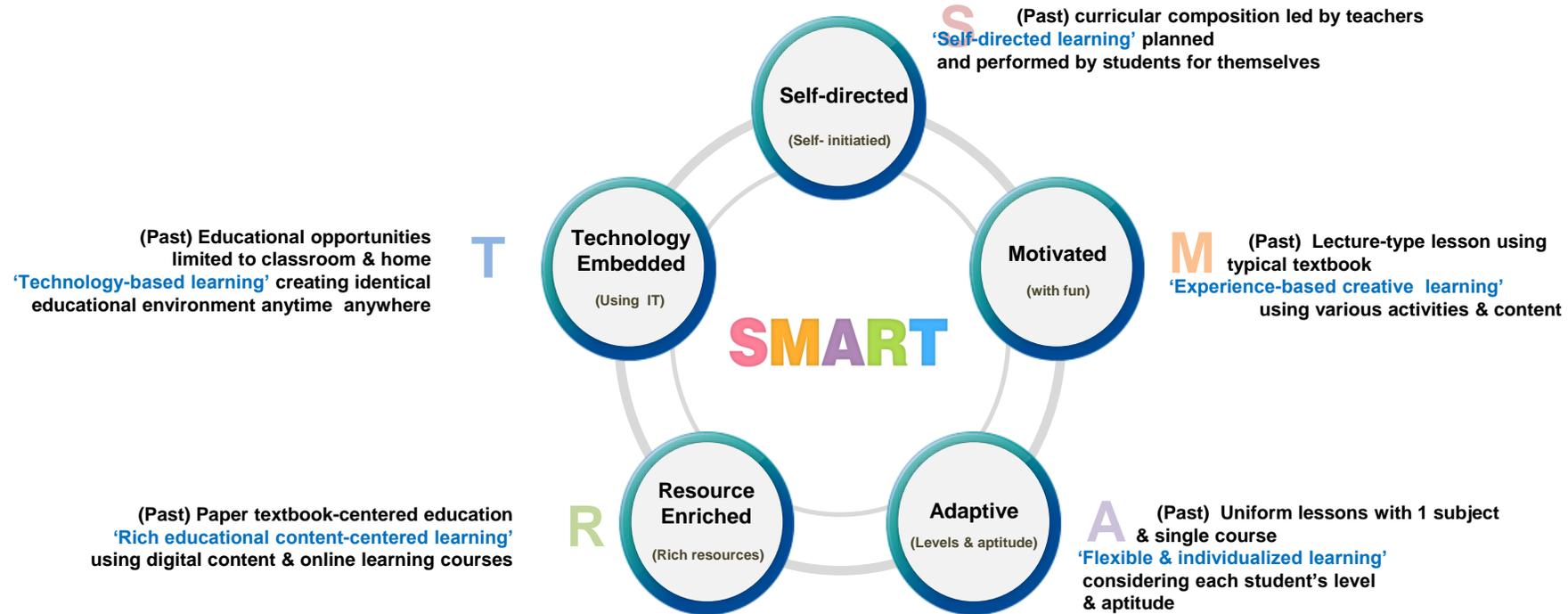
- Hangeul by King Sejong.
- Historical assets of literary culture.
- Social demand of education known as the education fever.
- And Many other unknown secrets...
- One clue unknown: **홍익인간** (the maximum interests to human beings) as the national goal of education proclaimed.

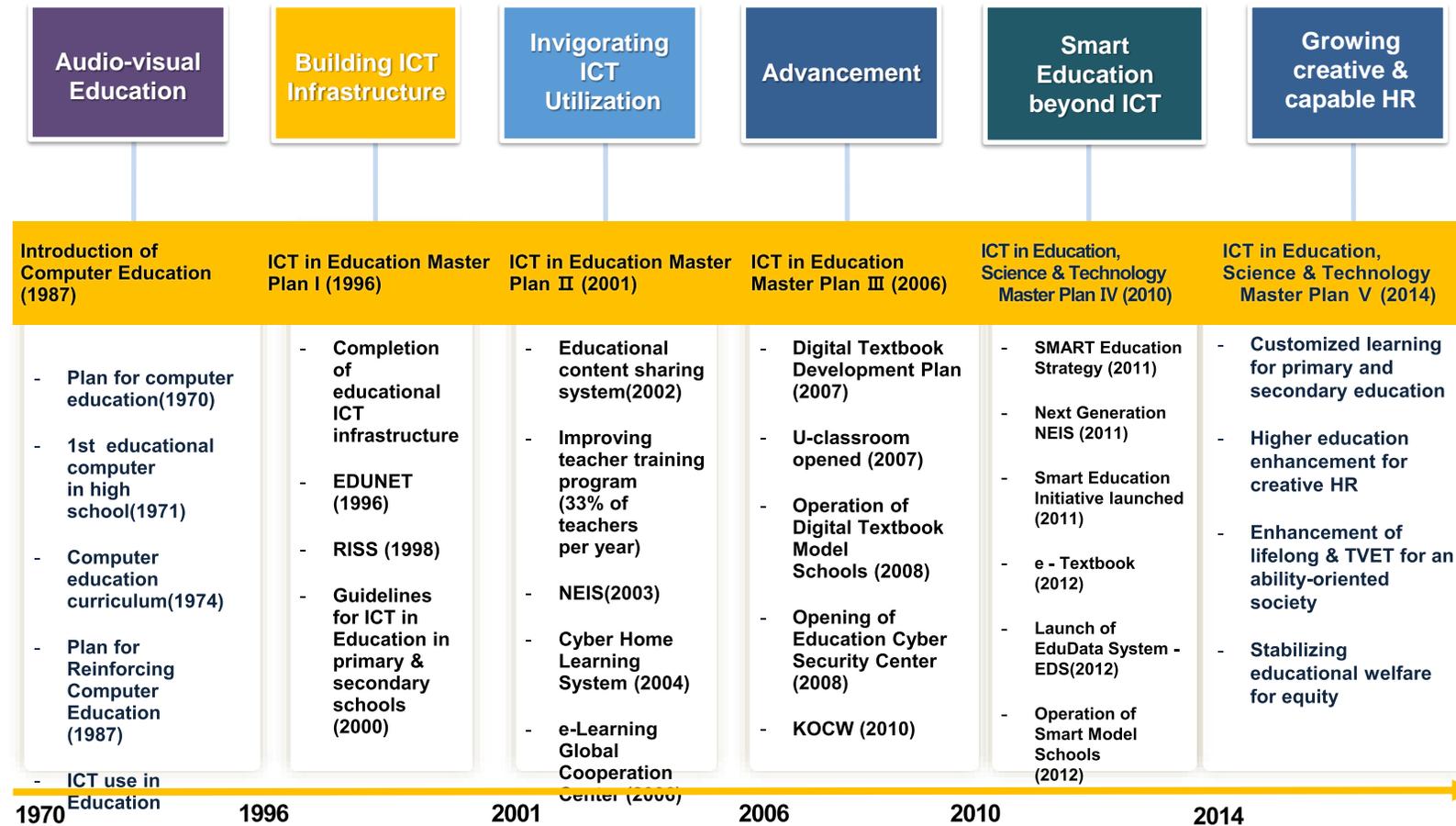
There was one smart challenge, 2011 in Korea !



Definition of SMART Education

SMART Education aims to build an intelligent customized learning system for strengthening competencies of **learners in the 21st century** and to be a driving force for innovating educational system, including educational environment, content & methods, and assessment





Progress of ICT in Education to Smart Education

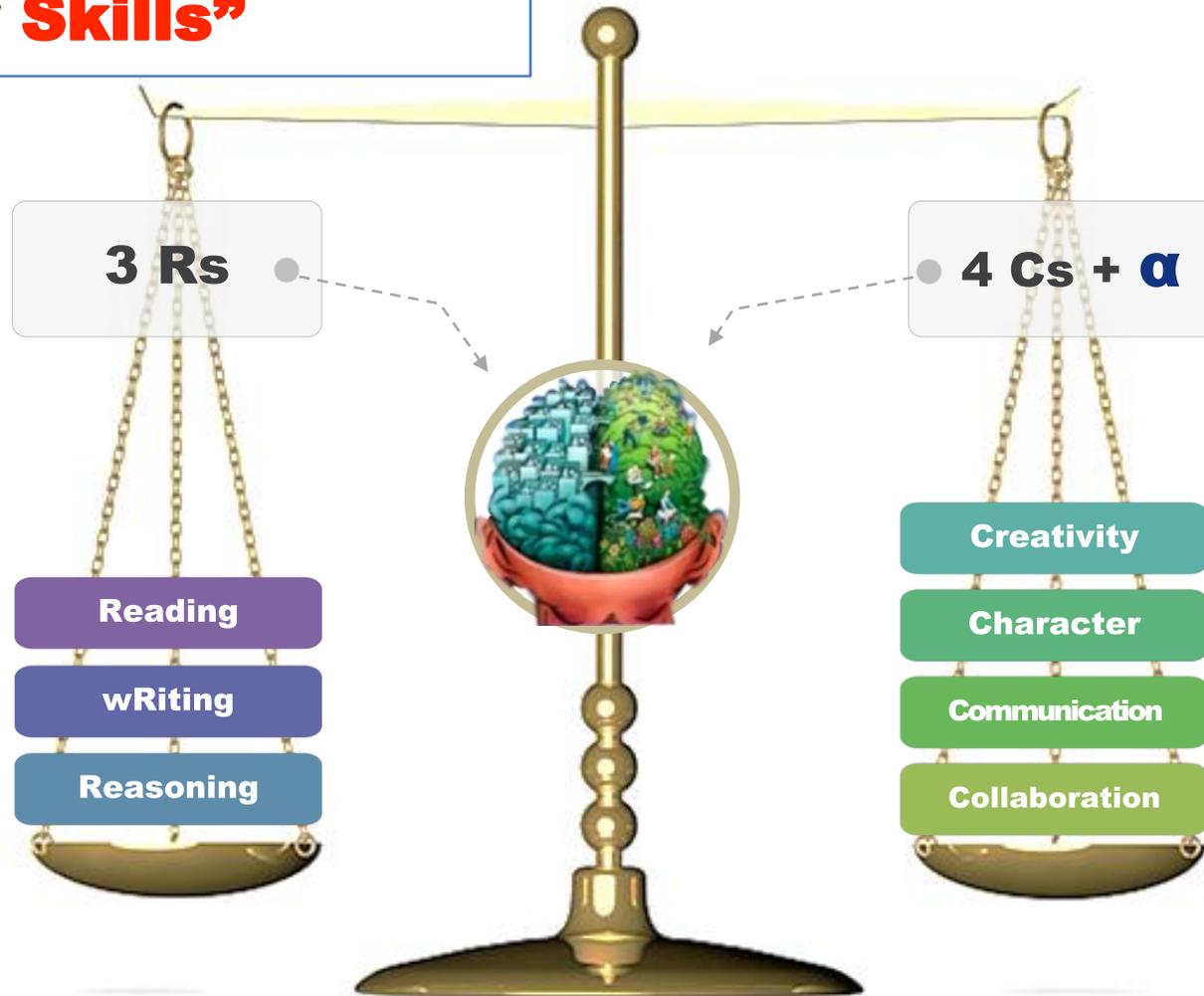
But stopped soon, by politics !

**By the way,
what pedagogical implications
do we have?**

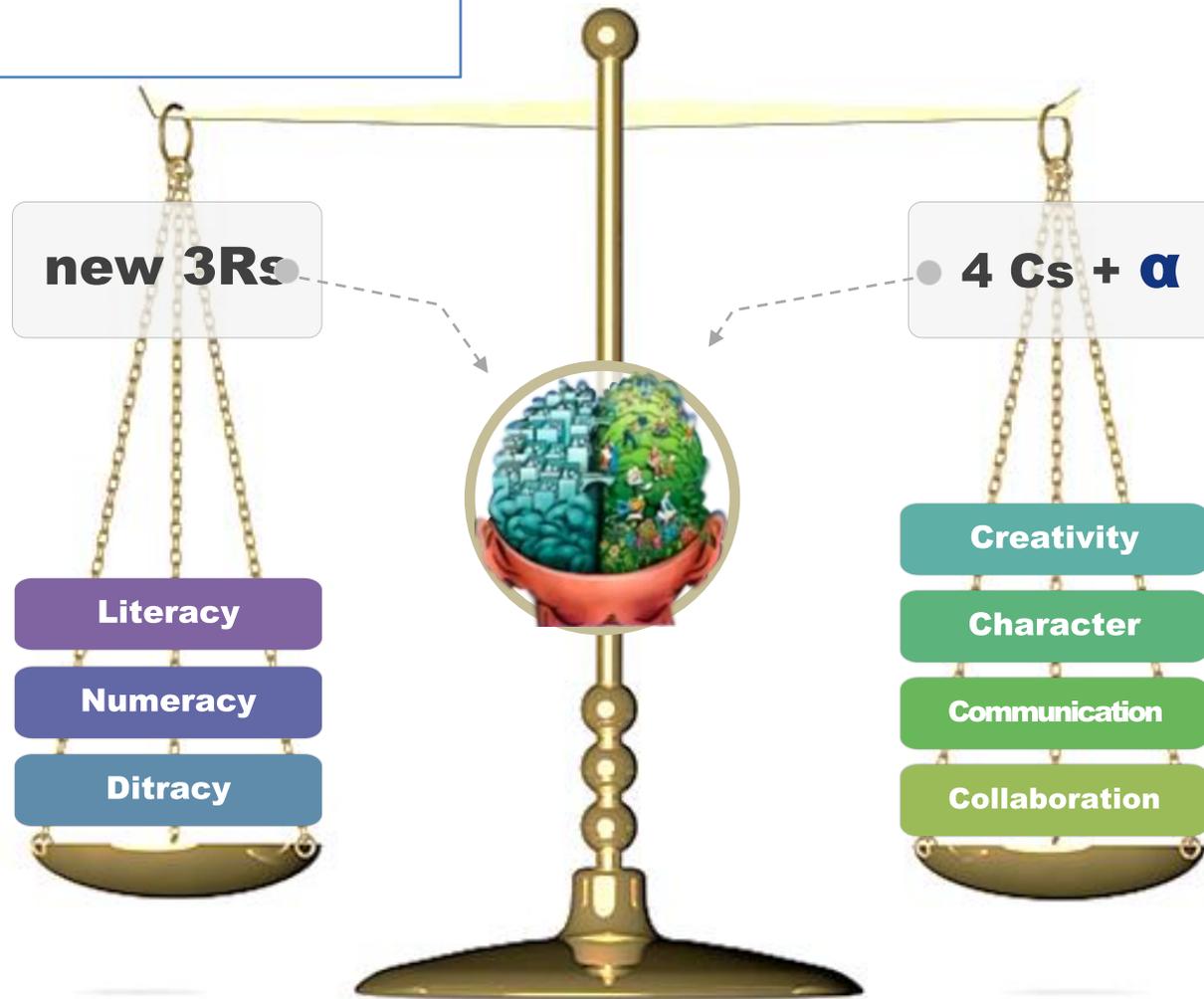
**그런데, 왜 우리는 그동안
주춤했을까?**

**사실, 우리는 방법을 찾아왔으며,
조금씩 나아가고 있는 중이다.**

Some impossible mission ? “21st Century Skills”



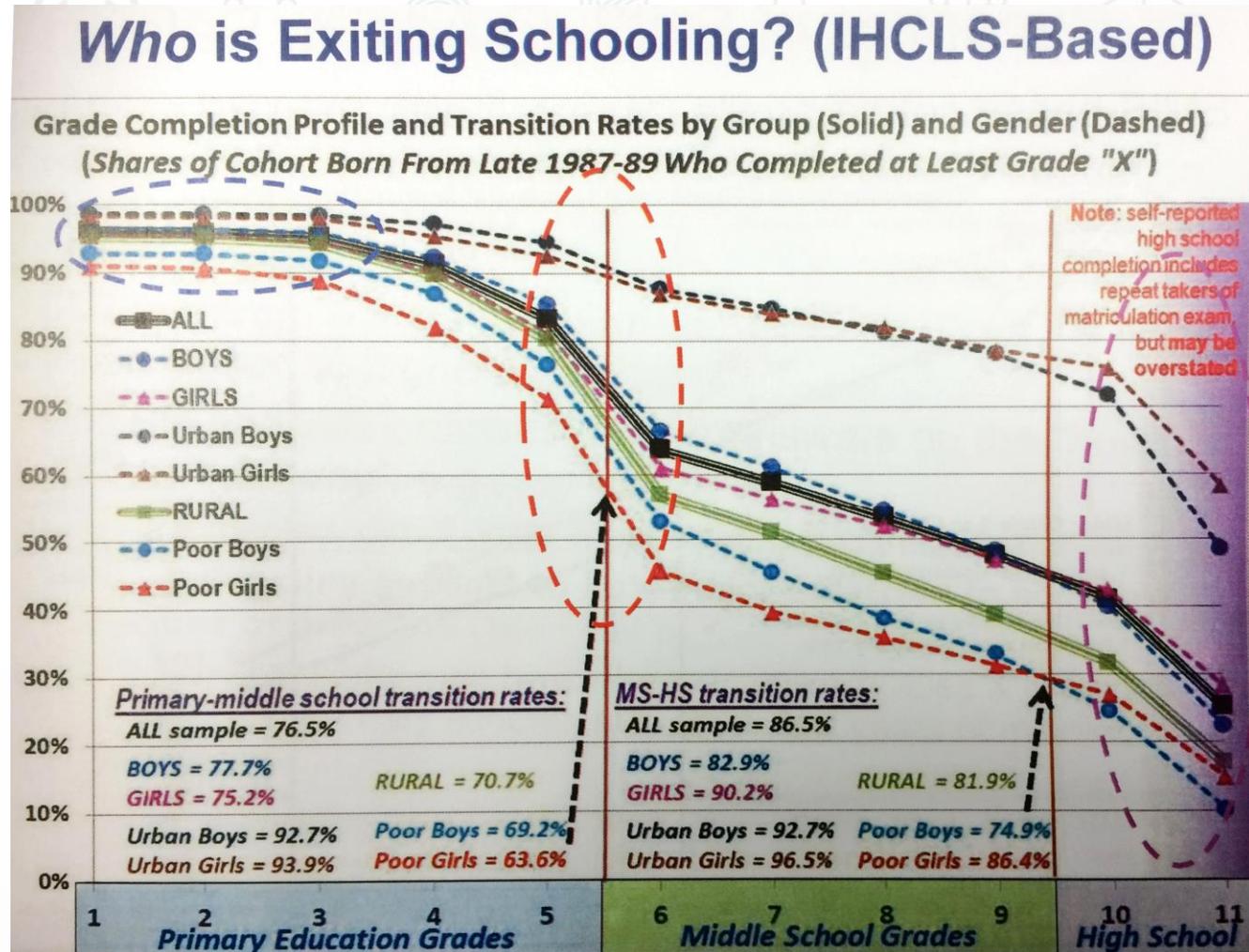
Some possible dream ? “New 3 Rs”



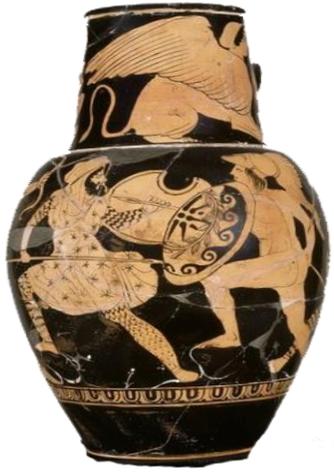
One Example: Myanmar Report on Education

British surprised at higher adult literacy in Myanmar than in London when they came in 1890s !

However,,,,,,



최초의 교과, 영원한 교과 !



역사를 바꾼 위대한 교수법들 !

Greek Chorus by Plato (Nomoi, 법률)

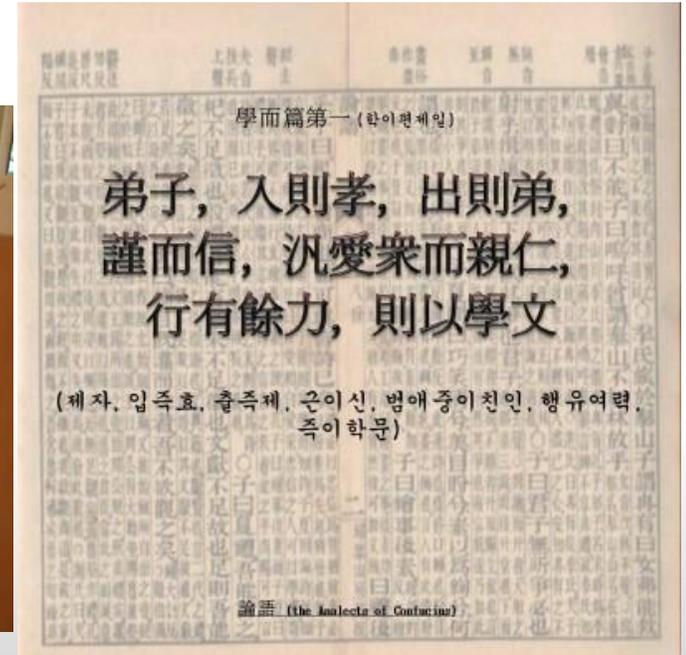
『법률』에서 절제는 시민교육의 목적이며 절제의 함양은 합창가무(chorus)와 전문 (prooimion)을 통한 설득으로 완성된다



Havruta by Jews



공자왈, 글자를 배우라 !



Periodic Table of Hangul

[ha:n.gul]

What are Jamo?

Jamo are the symbol that is used to create Hangul syllables. Jamo are the combination of the words *Jaeum* (consonant) and *Moseum* (vowel). Jamo can be vowels or consonants, and are the building blocks of the Hangul script.

Name of the Jamo → 기역 1 Official Jamo order

Jamo →

Romanization → g,k

Pronunciation as the initial → Start of a word [k]

Pronunciation as the final → Start of a syllable [g]

IPA symbol → The final [k]

The first part of any syllable in Hangul always begins with a consonant or a consonant cluster. This Jamo is called "The Initial".

Vertical shaped vowels are placed on the right side of "The Initial". (Rule ① and ③)

There is only one vowel in each syllable. The vowel comes second and is called "The Medial".

In addition to the basic consonants, the modern Hangul system allows the five twin consonant clusters (ㄸ, ㅌ, ㅍ, ㅍ, ㅍ), to be used as "The Initial".

Horizontal shaped vowels (ㅏ, ㅑ, ㅓ, ㅕ, ㅗ) are placed under "The Initial" and before "The Final". (Rule ② and ④)

- Consonants**
- Basic Consonants
 - Twin Clusters
 - Other Clusters
- Vowels**
- Basic Vowels
 - Vertical Diphthongs
 - Vertical + Horizontal Diphthongs

아 1

Romanized alphabet is a generalized translation of the Hangul Jamo. It does not represent the actual pronunciation.

Unlike English vowels, Hangul vowels have only one pronunciation.

[a] "a" as in father.

First encounter: Letter & Number

Consonants										Vowels									
ㄱ	ㅋ	ㆁ	ㄴ	ㄷ	ㅌ	ㄹ	ㅁ	ㅇ	ㅇ	ㅏ	ㅑ	ㅓ	ㅕ	ㅗ	ㅛ	ㅜ	ㅠ	ㅡ	ㅣ
Start of a word [k]	Start of a syllable [g]	The final [k]	[n] Pronounce as N in any position.	Start of a word [t]	Start of a syllable [d]	The final [t]	The initial [l], [r]	The final [r]	[m] Pronounce as M in any position.	[A] or [ə]	[a] "a" as in father.	[ja] or [jə]	[jə] "yu" as in "yup".	[o]	[o] The sound of "oh" in English.	[u]	[u] "oo" as in "soon".	[ju]	[ju] The sound of "you" in English.
ㄷ	ㅌ	ㄴ	ㄷ	ㅌ	ㄹ	ㅁ	ㅇ	ㅇ	ㅇ	ㅏ	ㅑ	ㅓ	ㅕ	ㅗ	ㅛ	ㅜ	ㅠ	ㅡ	ㅣ
Start of a word [d]	Start of a syllable [g]	The final [d]	The initial [l], [r]	The final [r]	[m] Pronounce as M in any position.	이음 as the initial is silent, while 이음 as the final has /ng/ sound. So this syllable is pronounced as "ing" as in "ping".	이음 as the initial is silent, while 이음 as the final has /ng/ sound. So this syllable is pronounced as "ing" as in "ping".	이음 as the initial is silent, while 이음 as the final has /ng/ sound. So this syllable is pronounced as "ing" as in "ping".	이음 as the initial is silent, while 이음 as the final has /ng/ sound. So this syllable is pronounced as "ing" as in "ping".	[A] or [ə]	[a] "a" as in father.	[ja] or [jə]	[jə] "yu" as in "yup".	[o]	[o] The sound of "oh" in English.	[u]	[u] "oo" as in "soon".	[ju]	[ju] The sound of "you" in English.
ㅂ	ㅍ	ㅅ	ㅇ	ㅈ	ㅊ	ㅊ	ㅊ	ㅊ	ㅊ	ㅏ	ㅑ	ㅓ	ㅕ	ㅗ	ㅛ	ㅜ	ㅠ	ㅡ	ㅣ
Start of a word [p]	Start of a syllable [b]	The final [p]	The initial [s]	A soft /s/	The final [t]	No sound value as the initial	The final [g]	Start of a word [tɕ]	Start of a syllable [dʑ]	[A] or [ə]	[a] "a" as in father.	[ja] or [jə]	[jə] "yu" as in "yup".	[o]	[o] The sound of "oh" in English.	[u]	[u] "oo" as in "soon".	[ju]	[ju] The sound of "you" in English.
ㅅ	ㅆ	ㅈ	ㅊ	ㅊ	ㅊ	ㅊ	ㅊ	ㅊ	ㅊ	ㅏ	ㅑ	ㅓ	ㅕ	ㅗ	ㅛ	ㅜ	ㅠ	ㅡ	ㅣ
The initial [tʃ]	"ch" as in "chew"	The final [t]	[k] Pronounce as K in any position.	[t] Pronounce as T in any position.	The initial [k]	Tense /k/	The final [k]	The initial [tʃ]	Tense /tʃ/	[A] or [ə]	[a] "a" as in father.	[ja] or [jə]	[jə] "yu" as in "yup".	[o]	[o] The sound of "oh" in English.	[u]	[u] "oo" as in "soon".	[ju]	[ju] The sound of "you" in English.
ㅍ	ㅑ	ㅓ	ㅕ	ㅗ	ㅛ	ㅜ	ㅠ	ㅡ	ㅣ	ㅏ	ㅑ	ㅓ	ㅕ	ㅗ	ㅛ	ㅜ	ㅠ	ㅡ	ㅣ
[p], [f]	h	The initial [h]	[k] ㅏ is silent in the syllable, affects the following syllable.	[n] ㅑ is silent in the syllable, affects the following syllable.	[n] ㅓ is silent in the syllable, affects the following syllable.	[k] in the syllable. [r] if there is a following syllable.	[m] in the syllable. [r] if there is a following syllable.	[r] ㅕ is silent in the syllable, affects the following syllable.	[r] ㅗ is silent in the syllable, affects the following syllable.	[A] or [ə]	[a] "a" as in father.	[ja] or [jə]	[jə] "yu" as in "yup".	[o]	[o] The sound of "oh" in English.	[u]	[u] "oo" as in "soon".	[ju]	[ju] The sound of "you" in English.
ㅈ	ㅊ	ㅊ	ㅊ	ㅊ	ㅊ	ㅊ	ㅊ	ㅊ	ㅊ	ㅏ	ㅑ	ㅓ	ㅕ	ㅗ	ㅛ	ㅜ	ㅠ	ㅡ	ㅣ
[tʃ]	[k]	[t]	[k]	[tʃ]	[k]	[tʃ]	[k]	[tʃ]	[k]	[A] or [ə]	[a] "a" as in father.	[ja] or [jə]	[jə] "yu" as in "yup".	[o]	[o] The sound of "oh" in English.	[u]	[u] "oo" as in "soon".	[ju]	[ju] The sound of "you" in English.
ㅊ	ㅊ	ㅊ	ㅊ	ㅊ	ㅊ	ㅊ	ㅊ	ㅊ	ㅊ	ㅏ	ㅑ	ㅓ	ㅕ	ㅗ	ㅛ	ㅜ	ㅠ	ㅡ	ㅣ
[tʃ]	[k]	[t]	[k]	[tʃ]	[k]	[tʃ]	[k]	[tʃ]	[k]	[A] or [ə]	[a] "a" as in father.	[ja] or [jə]	[jə] "yu" as in "yup".	[o]	[o] The sound of "oh" in English.	[u]	[u] "oo" as in "soon".	[ju]	[ju] The sound of "you" in English.
ㅊ	ㅊ	ㅊ	ㅊ	ㅊ	ㅊ	ㅊ	ㅊ	ㅊ	ㅊ	ㅏ	ㅑ	ㅓ	ㅕ	ㅗ	ㅛ	ㅜ	ㅠ	ㅡ	ㅣ
[tʃ]	[k]	[t]	[k]	[tʃ]	[k]	[tʃ]	[k]	[tʃ]	[k]	[A] or [ə]	[a] "a" as in father.	[ja] or [jə]	[jə] "yu" as in "yup".	[o]	[o] The sound of "oh" in English.	[u]	[u] "oo" as in "soon".	[ju]	[ju] The sound of "you" in English.
ㅊ	ㅊ	ㅊ	ㅊ	ㅊ	ㅊ	ㅊ	ㅊ	ㅊ	ㅊ	ㅏ	ㅑ	ㅓ	ㅕ	ㅗ	ㅛ	ㅜ	ㅠ	ㅡ	ㅣ
[tʃ]	[k]	[t]	[k]	[tʃ]	[k]	[tʃ]	[k]	[tʃ]	[k]	[A] or [ə]	[a] "a" as in father.	[ja] or [jə]	[jə] "yu" as in "yup".	[o]	[o] The sound of "oh" in English.	[u]	[u] "oo" as in "soon".	[ju]	[ju] The sound of "you" in English.

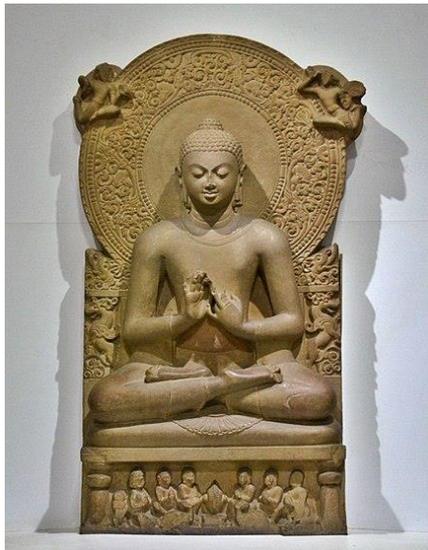
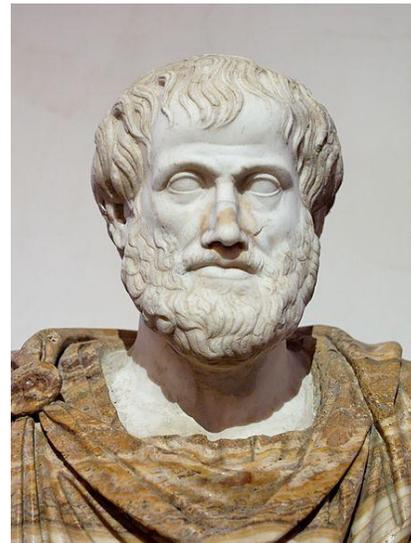
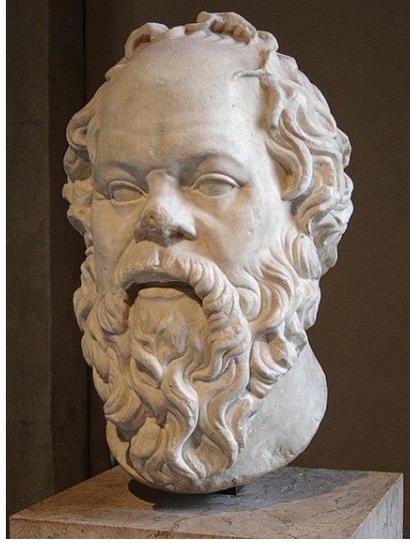
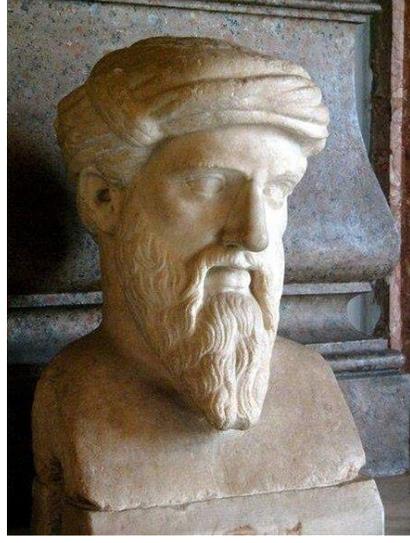
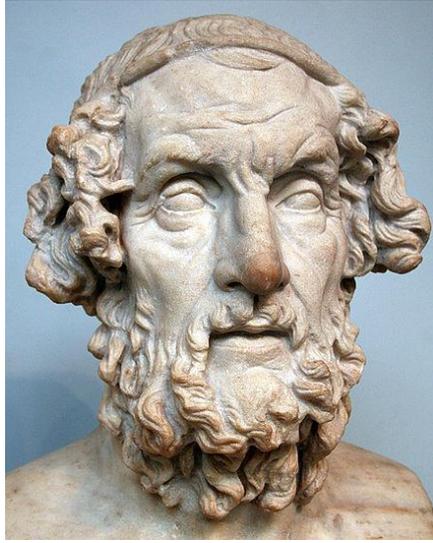


C1, C2 denote consonants, and V denotes a vowel. The constant that comes first (C1) is called as "The Initial", the vowel (V) is "The Medial", and the last consonant (C2) is "The Final". "The Medial" in a Hangul syllable is always a vowel.

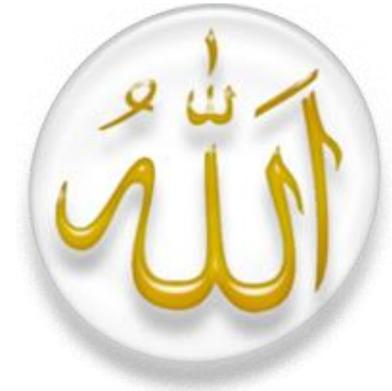
Consonant clusters in Hangul are treated as one Jamo. In the modern Hangul system, there are 16 sets of standard consonant clusters (#15-#30). However, only the five twin clusters (ㄸ, ㅌ, ㅍ, ㅍ, ㅍ) can be used as "The Initial". * Except for ㄸ, ㅌ, ㅍ, all the consonants and the rest of the clusters can be used as "The Final".

There are four methods of stacking consonants and vowels in Hangul. "The Initial" in a Hangul syllable must be a consonant or a consonant cluster followed by a vowel. There are no exceptions.

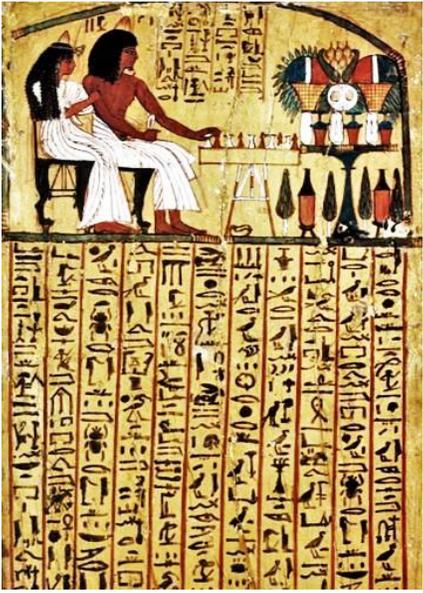
Diphthongs are combined vowels, but are treated as a single vowel in Hangul. This group of diphthongs (#15-#21) has both horizontal and vertical vowels. Therefore, they are placed on the right side and under "The Initial".



LOGOS



0



Egyptian hieroglyphics



Sumer cuneiform

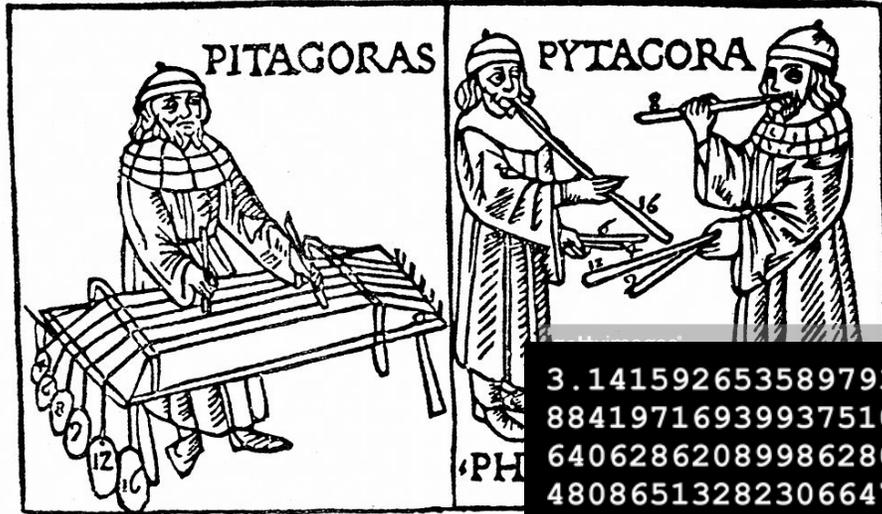


Chinese letters

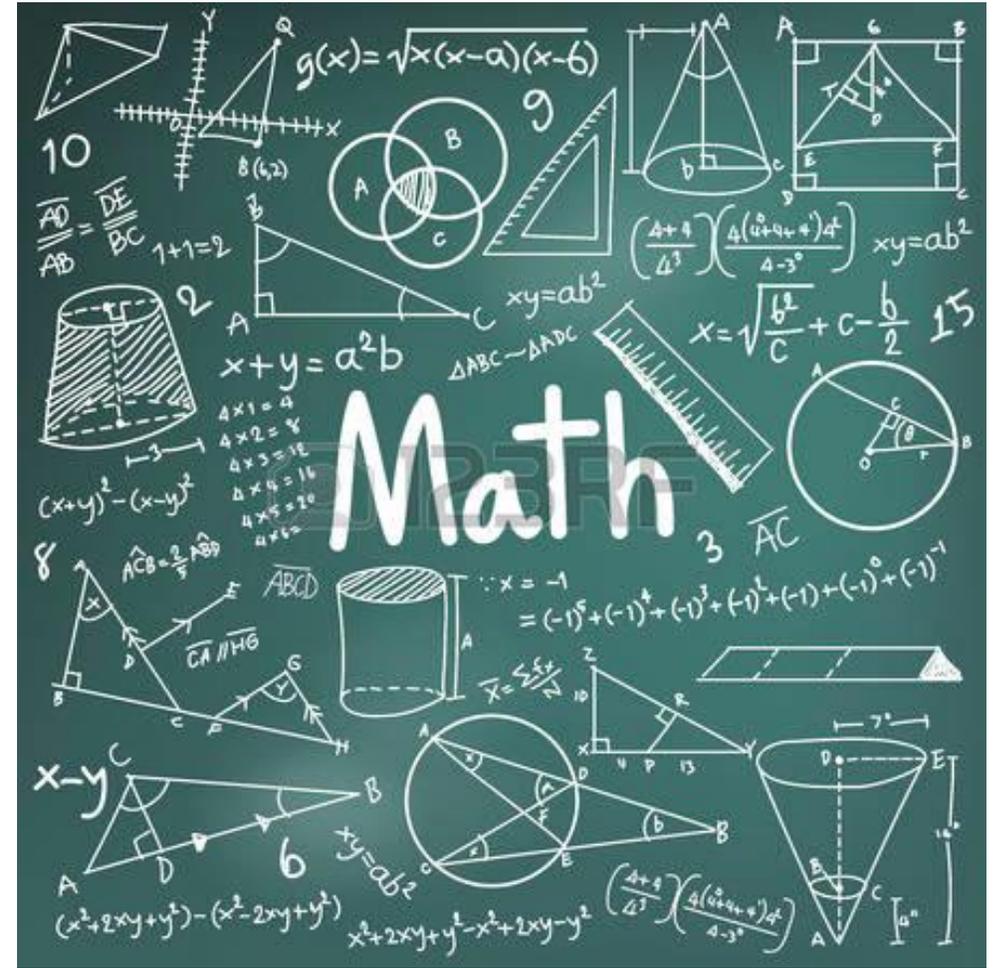


Roman alphabets

Tools of literacy



3.141592653589793238462643383279502
 88419716939937510582097494459230781
 64062862089986280348253421170679821
 48086513282306647093844609550582231
 72535940812848111745028410270193852
 11055596446229489549303819644288109
 75665933446128475648233786783165271
 20190914564856692346034861045432664
 82133936072602491412737245870066063
 15588174881520920962829254091715364
 36789259036001133053054882046652138
 41469519415116094330572703657595919
 53092186117381932611793105118548074
 46237996274956735188575272489122793



Tools of Numeracy

A close-up photograph of the fore-edge of a book. The pages are heavily aged, showing a yellowish-brown hue. There is significant physical damage to the paper structure, including a large, irregular tear in the upper-middle section where the fibers are exposed and frayed. The text "Second encounter: Paper" is overlaid in white on a dark horizontal band across the center of the image.

Second encounter: Paper

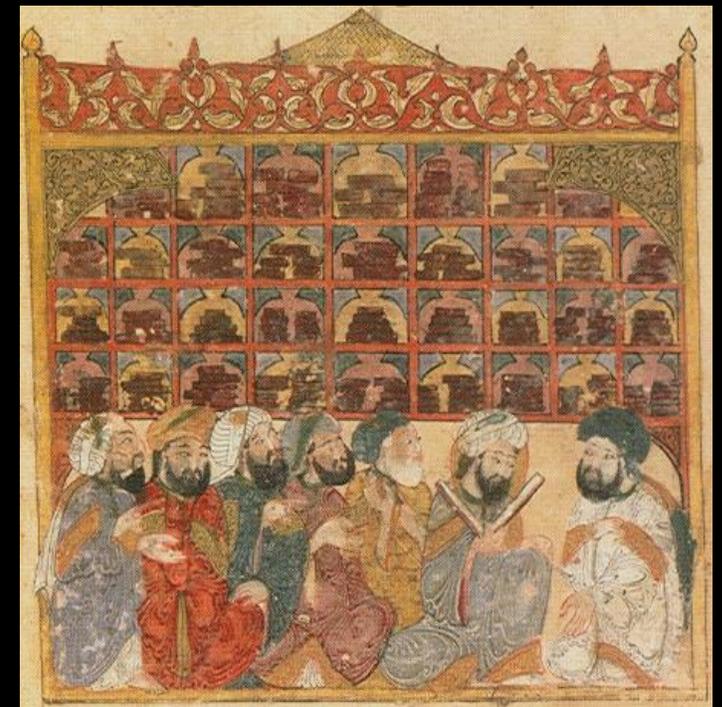
history of paper

http://en.wikipedia.org/wiki/History_of_paper





코란의 기적: 종이와의 만남, 그리고 사라센 과학의 공헌

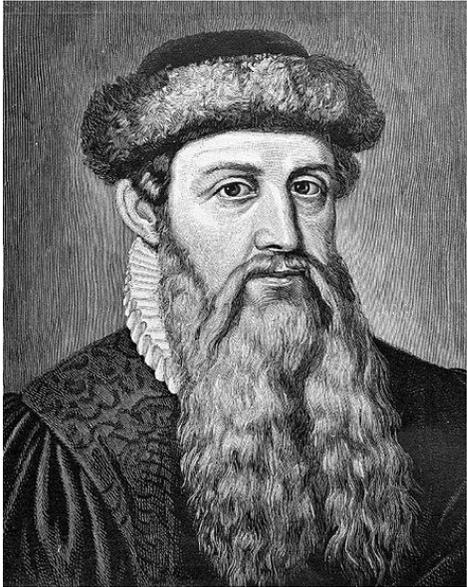


실크로드, 종이의 전래

코란 최고본(버밍엄대학)

지혜의 집(아바스왕조)

인쇄술 발전에서 과학 혁명까지



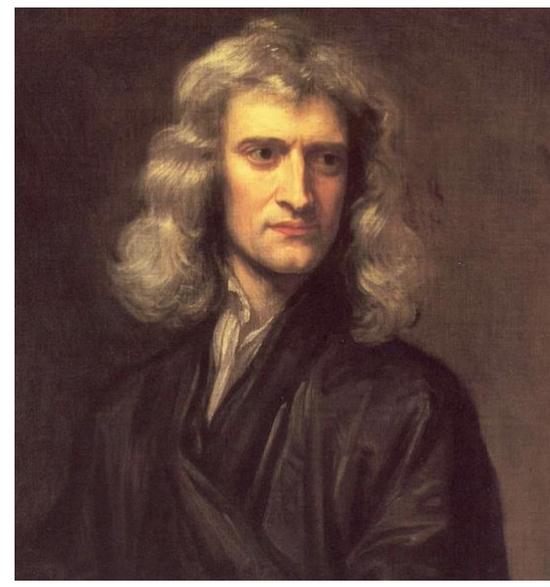
구텐베르크
인쇄술



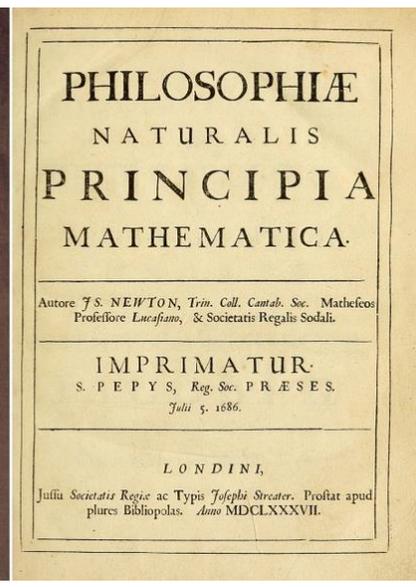
마르틴 루터
종교개혁



데카르트
이성의 발견

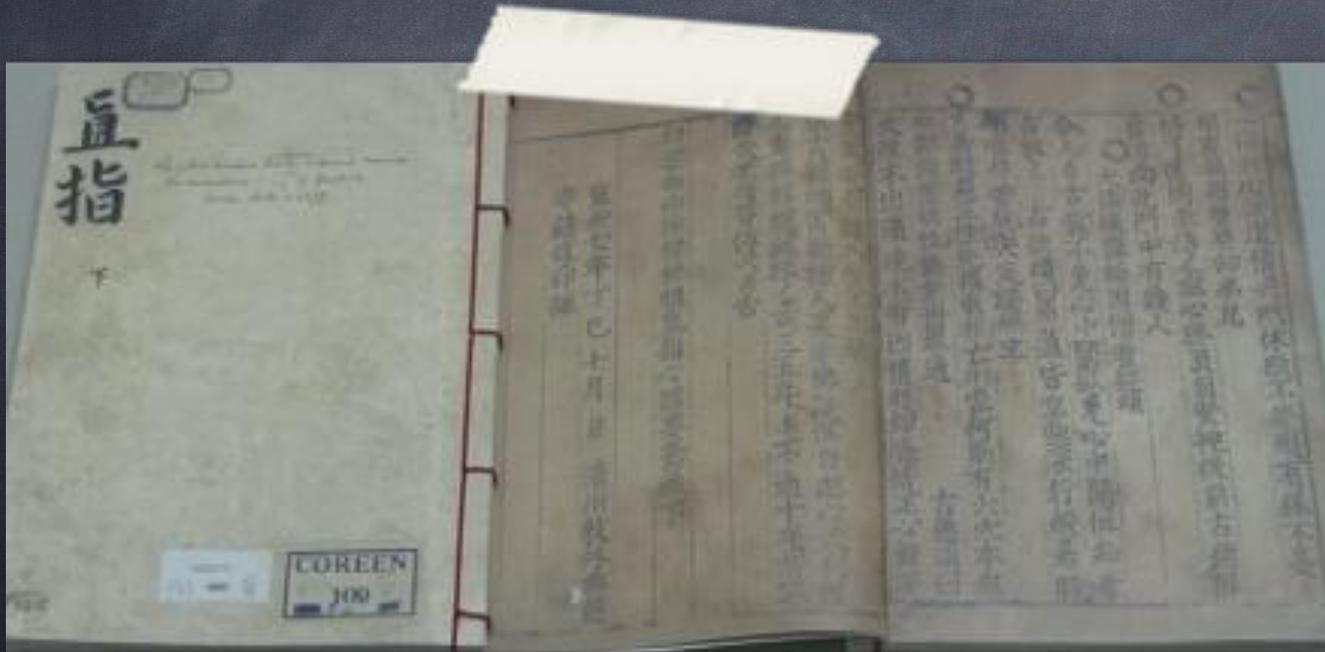


뉴우튼
과학 혁명



history of printing: 직지는 왜 ?

http://en.wikipedia.org/wiki/History_of_printing



- ## 직지는 왜 ?
- 한자와 인쇄술
 - 팔만대장경은 왜 목판?
 - 한글은 왜 ?



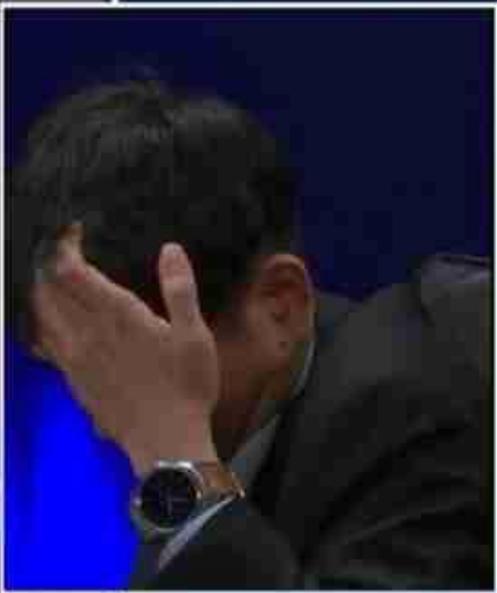
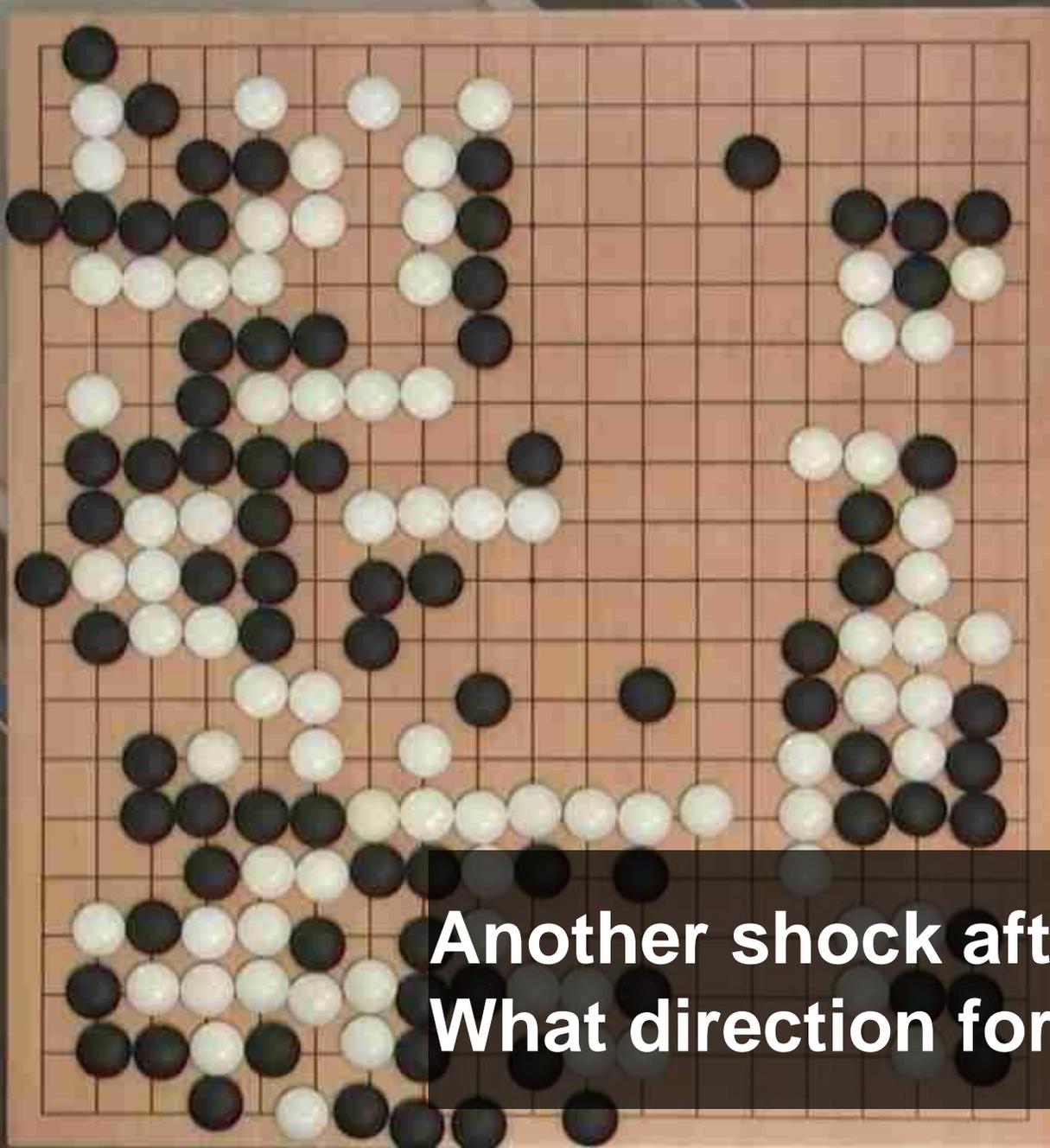
우리나라의 말이 중국말과 달라 한자와는 서로 통하지 아니하므로 이런 까닭에 어리석은 백성들이 말하고 싶은 것이 있어도 그 뜻을 담아서 나타내지 못하는 사람이 많으니라. 내가 이것을 딱히 여겨 새로 스물 여덟 글자를 만드니 사람마다 쉽게 깨우쳐 날로 씬에 편안하게 하고자 할 따름이니라.

Some late, but still a chance here

Now encounter: Computer & Smart Technology







● ALPHAGO
00:10:29

● LEE SEDOL
00:01:00



**Another shock after Sputnik,
What direction for education ?**

A digital illustration of a man and a robot facing each other. The man is on the left, shirtless, with dark hair and a serious expression. The robot is on the right, with a white, human-like face and a metallic, mechanical body. They are positioned as if in a confrontation or a moment of intense interaction. The background is a dark, gradient grey.

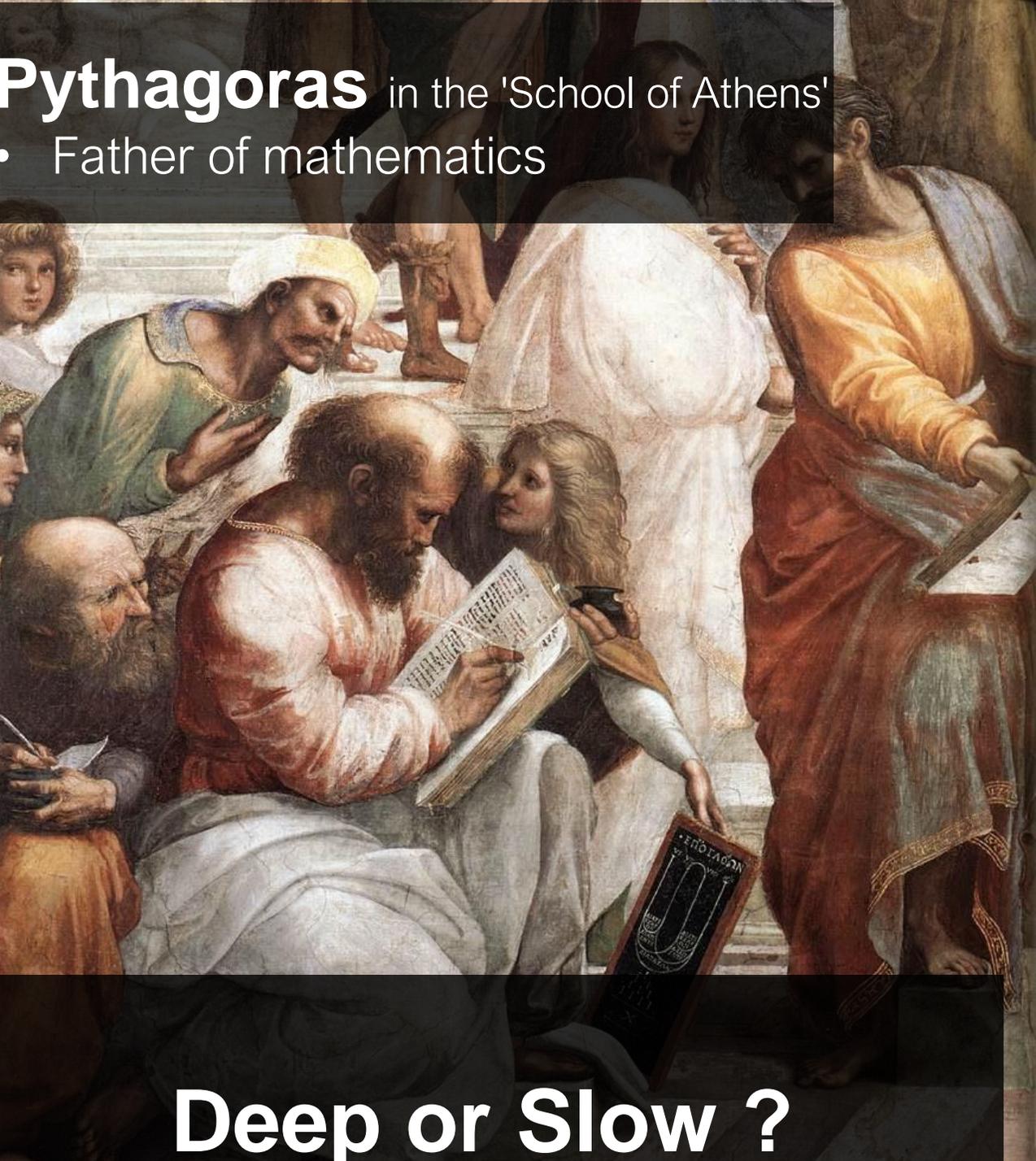
Man Vs Machine
누가 이길 것인가?



**Deep Learning by Machine ?
Slow Learning by Human ?**

Pythagoras in the 'School of Athens'

• Father of mathematics



17 Equations That Changed the World by Ian Stewart

1. **Pythagoras's Theorem** $a^2 + b^2 = c^2$ Pythagoras, 530 BC
2. **Logarithms** $\log xy = \log x + \log y$ John Napier, 1610
3. **Calculus** $\frac{df}{dt} = \lim_{h \rightarrow 0} \frac{f(t+h) - f(t)}{h}$ Newton, 1668
4. **Law of Gravity** $F = G \frac{m_1 m_2}{r^2}$ Newton, 1687
5. **The Square Root of Minus One** $i^2 = -1$ Euler, 1750
6. **Euler's Formula for Polyhedra** $V - E + F = 2$ Euler, 1751
7. **Normal Distribution** $\Phi(x) = \frac{1}{\sqrt{2\pi\rho}} e^{-\frac{(x-\mu)^2}{2\rho^2}}$ C.F. Gauss, 1810
8. **Wave Equation** $\frac{\partial^2 u}{\partial t^2} = c^2 \frac{\partial^2 u}{\partial x^2}$ J. d'Alembert, 1746
9. **Fourier Transform** $f(\omega) = \int_{-\infty}^{\infty} f(x) e^{-2\pi i x \omega} dx$ J. Fourier, 1822
10. **Navier-Stokes Equation** $\rho \left(\frac{\partial \mathbf{v}}{\partial t} + \mathbf{v} \cdot \nabla \mathbf{v} \right) = -\nabla p + \nabla \cdot \mathbf{T} + \mathbf{f}$ C. Navier, G. Stokes, 1845
11. **Maxwell's Equations** $\begin{aligned} \nabla \cdot \mathbf{E} &= 0 & \nabla \cdot \mathbf{H} &= 0 \\ \nabla \times \mathbf{E} &= -\frac{1}{c} \frac{\partial \mathbf{H}}{\partial t} & \nabla \times \mathbf{H} &= \frac{1}{c} \frac{\partial \mathbf{E}}{\partial t} \end{aligned}$ J.C. Maxwell, 1865
12. **Second Law of Thermodynamics** $dS \geq 0$ L. Boltzmann, 1874
13. **Relativity** $E = mc^2$ Einstein, 1905
14. **Schrodinger's Equation** $i\hbar \frac{\partial}{\partial t} \Psi = H\Psi$ E. Schrodinger, 1927
15. **Information Theory** $H = -\sum p(x) \log p(x)$ C. Shannon, 1949

Deep or Slow ?

Gloomy Goals: Education vs Literacy

여전히 글과 수를 읽는 것은 어렵다.....

- Jomtien Decade started in 1990:
- From Literacy for All to Education for All by 2000 (1990-2000 one decade), but delayed again.
- “universal access to basic education by 2015!” in 2000 at Dakar WEF.
- Incheon Declaration in 2015 for Global Citizenship Education.
- Six-year basic primary education seems to have reached at least in reports by 2015.
- However, 1 in 5 of world population are still illiterate, 2/3 are women.

학습 혁명은 무엇을 말하는가?

학습혁명이란.....

학습이 쉬운 일이 되는 것이며,

학습이 모두의 것이 되어야한다.



More People Have Cell Phones Than Toilets, U.N. Study Shows

Out of the world's estimated 7 billion people, 6 billion have access to mobile phones. Only 4.5 billion have access to working toilets

By Yue Wang | March 25, 2013

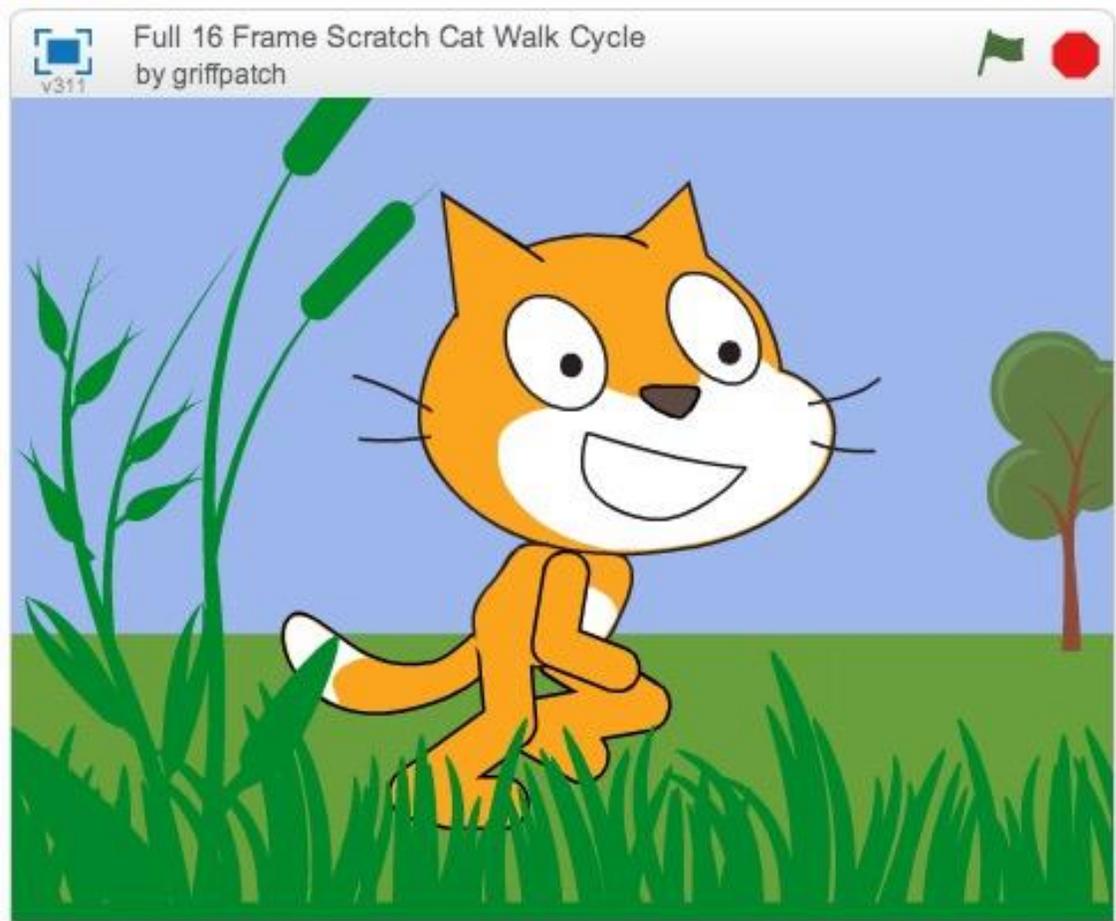
On the eve of World Water Day last week, the U.N. offered a sobering statistic: according to its recent study, more people on earth have access to cell phones than toilets.



Joseph Van Os / Getty Images

Out of the world's estimated 7 billion people, 6 billion have access to mobile phones. Far fewer — only 4.5 billion people — have access to working toilets. Of the 2.5 billion who don't have proper sanitation, 1.1 billion defecate in the open, according to the study.





Sprites

New sprite: [Icons for new sprite options]

- Scratch Cat
- Tree_3
- Glass-Tal...
- Glass-Tal...
- grass3

New backdrop:

- grass2
- Tree_2

Scripts

Costumes

Sounds

- Motion
- Looks
- Sound
- Pen
- Data
- Events
- Control
- Sensing
- Operators
- More Blocks

- when clicked
- when space key pressed
- when this sprite clicked
- when backdrop switches to backdrop
- when loudness > 10
- when I receive message1
- broadcast message1
- broadcast message1 and wait

Remix See project page

when clicked

- forever
 - wait 0.02 secs
 - next costume

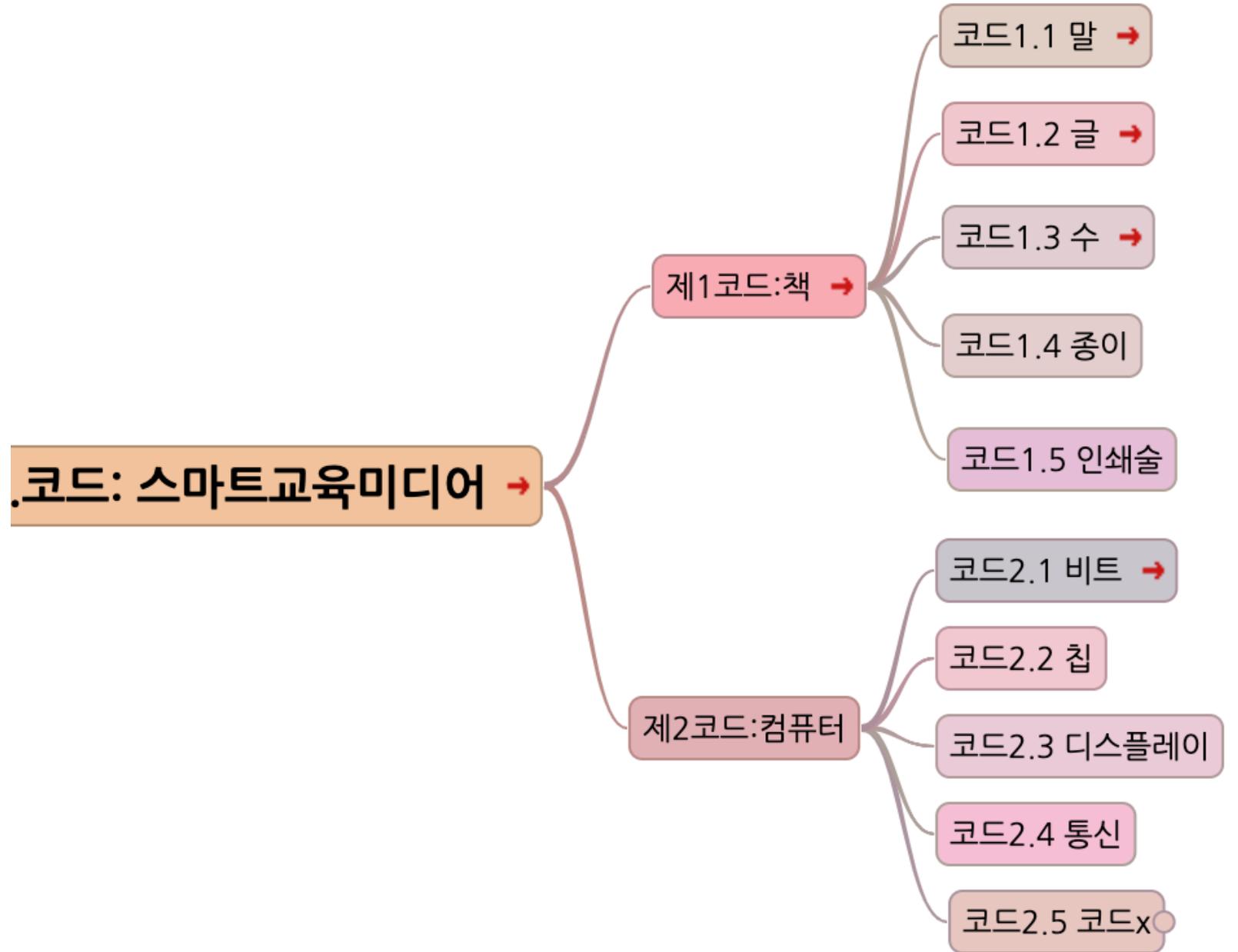
when this sprite clicked

- set size to 50 %
- go to x: -195 y: -123
- clear
- switch costume to Walk1
- repeat 8
 - stamp
 - change x by 55
 - next costume
- set size to 120 %
- go to x: 0 y: 55

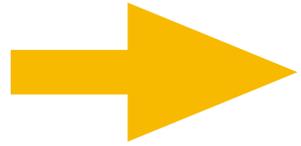
x: 5 y: 1

- 
- A globe of the Earth is held by several hands of different skin tones (white, brown, black) against a bright blue sky with scattered white clouds. The hands are positioned around the globe, symbolizing global unity and care for the planet.
- If you have some limited money, which do you choose now for global citizenship building; building a school or giving a smartphone?
 - **I will give them smartphone.**

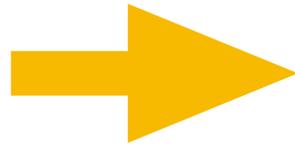
첫번째 코드: 책 Book
두번째 코드: 컴퓨터



7자유학과/
사서삼경



언수사과음미
체



9 스마트역량

